

Reference, together with truth and meaning, is one of the central —and perennial— problems in the philosophy of language, with a long tradition of research (especially within the analytic paradigm), in which two approaches have been immensely influential: the earlier one, proposed by Gottlob Frege (and further developed by Bertrand Russell and Peter Strawson, on the one hand, and Rudolf Carnap and Richard Montague, on the other), and the more recent, counter Fregean stance, originating with Saul Kripke's work, and advocated by, among others, Keith Donnellan, David Kaplan, and Hilary Putnam. According to the Fregean account (and much contemporary formal semantics) what "a linguistic expression refers to depends (...) on the mental state of the speaker who uses it" (p. 2). In contrast, the Kripkean approach highlights "the crucial role played by worldly historical facts that may be unknown to the speaker" (p. 2).

The book edited by Andrea Bianchi is a collection of 18 texts discussing crucial aspects of reference, and divided into three parts: on the nature of reference, on the relations between reference and cognition, and on the place of reference within semantic theory. The collection deserves an in-depth review; below, however, the chapters are only briefly mentioned and commented upon (since it would be virtually impossible to choose and single out 'the most interesting ones').

In the introduction, 'Open Problems on Reference', Andrea Bianchi provides a concise and very useful overview of problems related to contemporary research on reference. He divides them into three groups: the foundational problems (connected especially with identifying the very notion of reference, and attempting to work out a general theory of reference), problems stemming from our understanding of cognition, and the semantic problems proper (such as e.g. proper names in a theory of reference, indefinite descriptions, etc.). He also observes that talking about things, the triggering mechanism for reference, is a result of the interaction of a number of different cognitive abilities, the properties of language, and the contribution of the context, which means that studying reference needs to take into consideration cognitive aspects as well.

Six papers in the first part, 'The Nature of Reference', address the foundational issues. Christopher Gauker claims in 'The Illusion of Semantic Reference', that we "are misled by our ordinary practices of attributing knowledge of meanings" (p. 22), and hence argues, somewhat controversially, for a semantics that does not appeal to reference, and concludes that "The hard work of dispensing with semantic reference lies in constructing alternative accounts of those linguistic and mental phenomena that we might have thought we should explain in terms of semantic reference" (p. 38). Diego Marconi focuses on 'Reference and Theories of Meaning as Use'. He discusses Wittgenstein's contribution to the debate, Paul Horwich's approach, and contrasts the accounts of semantic value based on the notion of use and semantic externalism. Edouard Machery, Justin Sytsma, and Max Deutsch present in their contribution, 'Speaker's Reference and Cross-Cultural Semantics', the results of some empirical studies which considerably modify Kripke's anti-descriptivist intuitions, and arrive at the conclusion that there is strong evidence "that genuine intuitions about semantic reference vary both across and within culture" (p. 74).

The next three chapters investigate the nature of reference in connection with proper names. Genoveva Martí concentrates on 'Reference without Cognition', and argues against some new trends in foundational semantics. She stresses that "Socially or individually, for

a sound to be the name of something, there has to be a pattern of repeated, systematic use. There has to be a connection between use and use, a chain of uses. The links in the chain are not people, they are not users of the name; they are uses of the name" (p. 90). Andrea Bianchi discusses in 'Repetition and Reference' Kripke's approach to reference. He observes that even 40 years after Kripke's *Naming and Necessity* there is still no full-blown theory based on these principles, and offers his own version of theory (inspired by Kaplan's work), concentrating on the (appropriately formalized) notion of 'repetition'. The last chapter in this section is Michael Devitt's 'Should Proper Names Still Seem So Problematic?'. Devitt updates his causal theory of names, aiming for a naturalistic (and anti-Cartesian) development of Kripke's theory. Whereas Bianchi is concerned with the theory of a proper name's reference, Devitt focuses on the meaning of proper names (and, in answering the title question, concludes that proper names should not seem so problematic). He also emphasizes that any theory of reference "must look to future psycholinguistics for more details" (p. 128).

The second part, 'Reference and Cognitions', comprises three papers dealing with problems related to cognition and various cognitive mechanisms. Antonio Capuano contrasts, in 'Thinking about an Individual', two pictures of thinking about an object, namely, the inside-out and the outside-out pictures. The author shows how these approaches relate to contemporary philosophy of mind, and again the discussion shows the movement from an approach inspired by Frege and Russell (and adopted by Tyler Burge), to the one advocated by Kripke and Donnellan. Whereas in the inside-out picture of cognition human cognition is grounded in a non-natural relation, in the outside-in picture human cognition is produced by natural-historical processes. Capuano favors the second approach and observes that "thinking is like seeing (...), when thinking an object enters our mind and strikes us by sending information" (p. 163). The relation between thought and different aspects of cognition is further discussed by Marga Reimer in 'Drawing, Seeing, Referring: Reflections on Macbeth's Dagger'. Reimer distinguishes ontic and non-ontic reference, concentrates on empty reference, and concludes with the assumption that there are in fact objects of hallucination (cf. Macbeth's dagger), "actual if unreal" (p. 187). Such objects, albeit abstract rather than physical are "created by the inadvertent hypostatization of an ordinary visual experience" (p. 184). Reimer's approach might provide useful tools for investigating the ontic status of cognitive states (purportedly) experienced by fictional characters.

In the final chapter of this part, John Perry analyzes 'The Cognitive Contribution of Names'. He considers an issue raised by Frege (in 'On Sense and Reference'), and connected with identity and cognitively relevant difference. Perry introduces the term 'direct cognitive contribution' for the property of names that is responsible for the difference in the direct cognitive motivation (of the speaker) and cognitive impact (on the hearer) of sentences that differ only in containing different names for the same thing (p. 190). This approach offers a powerful tool for analyzing the social, historical and political functions of proper names. Perry supports a minimalist account of the semantics of proper names and defends the referentialist approach, where referentialism with respect to proper names is "the view that proper names contribute the thing named to the proposition expressed by statements in which they are used" (p. 207). An important part of his argumentation is connected with the notion of 'nambiguity', i.e. the fact that the same name can be assigned to more than one individual (in contrast to individual constants).

The third part, 'Reference and Semantics', contains nine chapters investigating the relation fundamental for philosophy of language (and for linguistics and philosophy in general), once again showing the interconnections existing between reference and proper names. Ernesto Napoli's contribution is titled 'Names as Predicates?' and as the question mark suggests, he disputes the claim that names are predicates, and more precisely, he disputes two theses: that the apparently predicative occurrences of a name are really predicative, and that the apparently argumental occurrences of a name are really non-argumental, and hence predicative (under the general assumption that the occurrences of names are either argumental or predicative) (p. 211). He demonstrates that being a name of an individual is not a property of an expression but of occurrences of expressions, and hence "a theory that minimizes the non-literal use of a name by holding that 'N' is equivalent to 'bearer of N' is definitely not the best choice" (p. 223). Robin Jeshion continues with 'Names Not Predicates'. She critically discusses referentialism and predicativism about proper names, and takes some steps towards discerning the right semantics for all uses of proper names. She challenges the uniformity argument, supposed to favor predicativism over referentialism, and concludes that her aims 'have been almost exclusively critical, largely confined to undermining the uniformity argument advanced by predicativists' (p. 249). In 'Literal Uses of Proper Names' Delia G. Fara, a well-known proponent of predicativism, disputes Jeshion's criticism, showing that the examples offered in the preceding chapter do not refute predicativism. She briefly summarizes the earlier, classical, approaches (especially advocated by Tyler Burger, and also to some degree by W.V.O. Quine), where referential proper names are considered as the count-noun complements of an unpronounced determiner, such as 'that', 'the', or 'some' (p. 253), and concludes with some methodological remarks on constructing an appropriate semantic theory. These two chapters (together with Jeshion's rejoinder in the following chapter and Fara's postscript) offer fascinating insights into 'semantics in the making', and illustrate the ongoing search for an adequate semantic account of proper names.

Marco Santambrogio discusses 'Empty Names, Propositions, and Attitude Ascriptions'. He observes that "empty names pose thorny problems to all semantic theories" (p. 295), and in his chapter presents a new-style approach to propositions, which are language-bound (and not language-independent). These new-style propositions are 'the primary truth bearers only in the sense that they are given their values before the sentences expressing them. But they have their values only relative to the sentences of some other language, taken as already understood' (p. 303). Ángel Pinillos returns in 'Millianism, Relationism, and Attitude Ascriptions' to Frege's puzzle, and claims that a solution to it might be found in intra-discourse relations (contra Kit Fine's attempt to introduce inter-discourse semantic relations into the semantics of mental state ascriptions). Samuel Cumming sketches in 'The Dilemma of Indefinites' a novel view of the relation between semantic content and truth; his approach follows from the following observation: an utterance of a declarative sentence has a semantic content and it has a truth-value; however the former is not sufficient to determine the latter because it is possible to secure reference through private commitment, whereas truth conditions are a sort of public commitment. It is only 'with expressions that refer by means of public commitment (...) that semantic content and truth condition will coincide' (p. 347-348).

Joseph Almog, Paul Nichols, and Jessica Pepp discuss in 'A Unified Treatment of (Pro-)Nominals in Ordinary English' the results of their project for a unified theory

of nominals (nouns, noun phrases, and pronouns) as ‘they appear in ordinary English’ (p. 350). Their proposal and conception of semantics understood as ‘a science of historical fact’ allow for unification in the whole domain of cognitive processing of information, and integrate linguistic reference with perception. Finally, the last contribution is Edward L. Keenan’s ‘Individuals Explained Away’. Keenan constructs a linguistically revealing formal semantics of a small fragment of natural language (English agentive nouns with their modifiers). He provides an explicit analysis of relevant entailment patterns, and his minimal semantics dispenses with entities such as possible worlds or proposition, in favor of a Boolean construal of classical model theory.

On Reference (together with *The Reference Book* by John Hawthorne and David Manley, OUP 2012, and *Empty Representations. Reference & Non-Existence*, edited by Manuel García-Carpintero and Genoveva Martí, OUP 2014) provides a most interesting collection of texts, showing the richness of the debate on the semantic and cognitive properties of reference; the book will most certainly exert considerable influence upon research in philosophy of language, philosophy of mind, and modern cognitive studies.

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GUSTAVO CAPONI. 2014. *Leyes sin causa y causas sin ley en la explicación biológica*. Colombia: Universidad Nacional de Colombia.

Gustavo Caponi es uno de los autores más versátiles del área hispanohablante en filosofía de la biología. Sus últimos trabajos como *La segunda agenda darwiniana* (2011) o *Réquiem por el centauro* (2012) se han centrado en problemas epistemológicos. La obra aquí reseñada sigue este camino y se centra directamente en dos de los problemas de más actualidad del área: la existencia de leyes y la noción de causalidad. En este *tour de force*, Caponi estructura su libro en cuatro capítulos: la existencia de leyes no causales; una interpretación de la causalidad no ligada a nociones nómicas; la aplicación de dicha explicación causal en biología; y, finalmente, las consecuencias de esta explicación biológica en un mundo físicamente regido. A modo de adenda, Caponi expone su visión del concepto de función.

La unión entre explicaciones causales y su desarrollo mediante leyes de la naturaleza viene estipulada desde el modelo Nomológico-Deductivo desarrollado a mediados del siglo xx por autores como Karl Popper o Carl Hempel. Esta unión implicaba que dichas explicaciones causales cumplieran los requisitos clásicos de una ley de la naturaleza: contenido empírico, aplicación universal, o la capacidad de resolver condicionales contrafácticos. Sin embargo, esta exigencia nómica para la explicación causal choca con la idea bastante extendida de que no existen leyes en biología. Tal postura se resume en la *tesis de la contingencia evolutiva* de John Beatty, donde la evolución ha sido un fenómeno contingente y, por lo tanto, sus posibles regularidades son un producto de ésta.